

**NATIONAL POLLUTANT  
DISCHARGE ELIMINATION  
SYSTEM (NPDES)**

**Application for  
Permit to  
Discharge  
Wastewater**

***Supplementary Instructions  
for STANDARD FORM A –  
MUNICIPAL***

**STANDARD FORM A – MUNICIPAL  
SUPPLEMENTARY INSTRUCTIONS**

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NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
APPLICATION FOR PERMIT TO DISCHARGE  
GENERAL INSTRUCTIONS  
STANDARD FORMS

The Federal Water Pollution Control Act, as amended by Public Law 92-500 enacted October 18, 1972, prohibits any person from discharging pollutants into a waterway from a point source unless his discharge is authorized by a permit issued either by the U.S. Environmental Protection Agency or by an approved State agency. Regulations for the operation of this program are published in the FEDERAL REGISTER as 40 CFR part 125 (38 F.R. 13528, May 22, 1973), available from the Government Printing Office, Washington, D.C. 20402. Applicants wishing detailed information regarding this form or the permit should refer to this publication. It is expected, however, that for most applicants, the attached cover letter and the general instructions below will provide the information necessary to complete the form.

*Who must apply.*—The owner and operator of any activity or wastewater system, publicly or privately owned, which discharges wastes from one or more point sources into a waterway, must obtain a permit for such discharge(s). Where the system is owned by one person but leased to another person for operation, it is the responsibility of the operator to obtain the permit. A separate application is to be submitted for each facility discharging separately which is owned and/or operated by the applicant. Federal departments, agencies, and instrumentalities are also subject to these requirements. Discharges into publicly owned treatment works are not subject to permit requirements. However, discharges to publicly owned collection systems not connected to a treatment works are subject to these requirements. For a municipality, a facility is defined as a distinct activity or installation, including connected wastewater transport systems, which operates under the control or jurisdiction of a single responsible organization and discharges pollutants from one or more discharge points.

*Application form to be used.*—There are two sets of National Pollutant Discharge Elimination System (NPDES) Forms which are to be used, short forms (A-D) and standard forms (A and C). These instructions are for the standard forms A and C. The standard form requires specific information on the activity or wastewater facility and on each discharge. Depending on the adequacy of the data submitted for determining the issuance of a permit, additional information and analyses may be required from an applicant. Standard forms are designed for different sources of discharge as follows:

Form A—Municipal Wastewater Systems.

Form C—Manufacturing and Commercial (including mining and vessel discharges).

If the discharge is from a Federal facility's treatment plant receiving more than 50 percent domestic waste (based on the dry weather flow rate), complete standard form A. All other dischargers (including dischargers of domestic waste), with the exception of municipalities, municipal-type activities (e.g., subdivisions, shopping centers, etc.) and

Federal facilities described above, must complete standard form C.

*Signature on application.*—The person who signs the application form will often be the applicant himself; when another person signs on behalf of the applicant, his title or relationship to the applicant should be shown in the space provided. In all cases the person signing the form should be authorized to do so by the applicant. An application submitted by a corporation must be signed by a principal executive officer of at least the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge(s) described in the form originate. In the case of a partnership or a sole proprietorship, the application must be signed by a general partner or the proprietor, respectively. In the case of a municipal, State, Federal, or other public facility, the application must be signed by either a principal executive officer, ranking elected official or other duly authorized employee.

*Attachments and supplemental information.*—Some items in this form may require narrative explanation; for this purpose, use the item labeled "Additional Information" at the end of sections I and II, or attach a separate sheet entitled "Additional Information." Where a separate sheet is used, be sure it is identified by the name of the applicant, the activity, and the discharge number to which it applies. Also, identify each separate remark by the item number and section of the form to which it refers.

Drawings required in section I should be attached to this application and identified by the name of the applicant and the activity. All other papers and attachments to the application must be similarly identified.

*Use of information.*—Except as specified below, all information contained in this application will, upon request, be made available to the public for inspection and copying. A separate sheet entitled "Confidential Answers" must be used to set out information which the applicant believes if disclosed to the general public would divulge methods and processes entitled to protection as trade secrets. The information must clearly indicate the item number to which it applies. Confidential treatment can be considered only for the information for which a specific written request for confidential treatment has been made on the attached sheet. However, in no event will identification of the contents, volume, and frequency of a discharge be recognized as confidential or privileged information.

*Completion of forms.*—Unless otherwise specified in the detailed instructions, each item in the forms must be answered. To indicate that each item has been considered, enter "NA," for not applicable, where a particular item does not fit the circumstances or characteristics of your operation or activity.

Assistance and advice regarding requirements for filing permit applications can be obtained through contact with your EPA Regional Office or approved State agency.

# Addresses of EPA Regional Offices and States Within Their Jurisdiction

Region	Address and Phone	State
I .....	Regional Administrator, Region I, Environmental Protection Agency, John F. Kennedy Federal Bldg., room 2303, Boston, Mass. 02203; attention: Permits Branch. 617-223-7210.	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont.
II .....	Regional Administrator, Region II, Environmental Protection Agency, 26 Federal Plaza, room 908, New York, N.Y. 10007; attention: Permits Branch. 212-264-9895.	New Jersey, New York, Virgin Islands, Puerto Rico.
III .....	Regional Administrator, Region III, Environmental Protection Agency Curtis Bldg., Sixth and Walnut Sts., Philadelphia, Pa. 19106; attention: Permits Branch. 215-597-9966.	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia.
IV .....	Regional Administrator, Region IV, Environmental Protection Agency, 1421 Peachtree St. NE., Atlanta, Ga. 30309; attention: Permits Branch. 404-526-3971.	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee.
V .....	Regional Administrator, Region V, Environmental Protection Agency, 1 North Wacker Dr., Chicago, Ill. 60606; attention: Permits Branch. 312-353-1472.	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin.
VI .....	Regional Administrator, Region VI, Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202; attention: 6WQ-CA 214-665-7518	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
VII .....	Regional Administrator, Region VII, Environmental Protection Agency, 1735 Baltimore Ave., Kansas City, Mo. 64108; attention: Permits Branch. 816-374-5955.	Iowa, Kansas, Missouri, Nebraska.
VIII .....	Regional Administrator, Region VIII, Environmental Protection Agency, 1860 Lincoln St., suite 900, Denver, Colo. 80203; attention: Permits Branch. 303-837-4901.	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming.
IX .....	Regional Administrator, Region IX, Environmental Protection Agency, 100 California St., San Francisco, Calif. 94111; attention: Permits Branch. 415-556-3450.	Arizona, California, Hawaii, Nevada, Guam, American Samoa, Trust Territories.
X .....	Regional Administrator, Region X, Environmental Protection Agency, 1200 Sixth Ave., Seattle, Wash. 98101, attention: Permits Branch. 206-442-1213.	Alaska, Idaho, Oregon, Washington.

## SECTION I. APPLICANT AND FACILITY DESCRIPTION: MUNICIPAL

1. *Legal name of applicant.*—This term applies to the person, agency, firm, or other entity which owns or is responsible for any waste treatment works, interceptor systems, or any facility/activity conducting operations that result or may result in a discharge of pollutants to a waterway. This may or may not be the same name as the facility or activity producing the discharge. Enter the name of the applicant as it is officially or legally referred to, e.g., Doddsonville Department of Public Works; Metropolitan Sanitary Commission. Do not use colloquial names as a substitute for the official name.

2. *Mailing address of applicant.*—Use the complete mailing address of the applicant's main office. This often will not be the same address as is used to designate the location of the work or activity (see item 5).

3. *Applicant's authorized agent.*—Give the name of person who is thoroughly familiar with the facts reported on the forms and who can be contacted by the Environmental Protection Agency, State offices, and other agencies involved in permit application processing and review.

The person named, although not necessarily the same as the signing official, is also subject to the provisions of law quoted below the signature line on the first page of this form.

5. *Discharge facility/activity.*—A facility is a distinct activity or installation, including connected transport systems, which operates under the control or jurisdiction of a single responsible organization and discharges pollutants from one or more discharge points. Name the facility/activity as it is officially or legally referred to in order to distinguish it from similar entities, if any, in the same geographical area. Do not use colloquial names as a substitute for the official name. Enter the address where the facility is located.

6.b. *Responsible organization receiving discharge.*—If part of your discharge is into a municipal waste transport system under a responsible organization other than the one responsible for your facility, give the name and mailing address of that responsible organization. If you discharge to more than one other system, provide the appropriate data of items 6b, 6c, and 6d on additional sheets. If exact flows to these other systems are not known, provide best estimates.

c. *Facility which receives discharge.*—Give the name of the waste treatment facility that ultimately treats the discharged waste from your facility.

7. *Facility discharges number and facility discharge volume.*—If the discharge is directly to land, use category "Surface impoundment with no effluent," "Underground percolation," or if to a surface which drains into a waterway, "Surface water."

A "continuous" discharge is one which occurs without interruption throughout the operation hours of the facility. An "intermittent" discharge is one which occurs and ceases at regular or irregular intervals either during or outside of the operating hours of the facility.

*Surface water.*—Water other than subterranean water, e.g., streams, estuaries, lakes, oceans, rivers.

*Surface impoundment with no effluent.*—A manmade

holding pond or basin large enough to contain all wastes discharged which allows evaporation with no or an insignificant amount of percolation into the ground and has no overflow.

*Underground percolation.*—The movement or flow of water through the interstices or the pores of soil or other porous medium.

*Well injection.*—This code is to be used for injection of wastes into a well.

8.a. *Facility bypass points.*—A bypass is an arrangement of pipes, conduits, gates, and valves whereby all or a portion of the flow is diverted and results in a discharge.

Indicate the number of bypass points that result in point discharges. A section II must be completed for each bypass point.

b. *Overflow.*—An overflow occurs when the volume of water exceeds the capacity of a transport system causing the extra water to be spilled or forced out of the system into a waterway. A section II must be completed for each overflow point.

9. *Collection system type.*—

*Separate storm.*—A separate collection system of pipes that carries only runoff from buildings and land caused by precipitation.

*Separate sanitary.*—A separate collection of pipes that carries:

(1) Domestic wastewater with storm and surface water excluded.

(2) Wastewater discharged from the sanitary conveniences of dwellings (including apartment houses and hotels), office buildings, industrial plants, or institutions.

(3) The water supply of a community after it has been used and discharged into a sewer.

*Combined sanitary and storm.*—A system of pipes which carries a mixture of storm water runoff, surface water runoff and other wastewater such as domestic or industrial wastewater.

10. *Municipalities or areas served.*—Enter the names of the municipalities or areas served by this facility and for each enter the best estimate of actual population served at the time of this application. If there is another sewer authority discharging into this facility, give the name of that authority and the actual population it serves. Do not include communities served by that sewer authority.

12. *Permits, licenses and applications.*—List all existing permits and licenses or permit and license applications granted, denied or requested from Federal, interstate, State or local agencies associated with any discharge described in this application. Example: A permit to discharge issued by a State water control office.

13. *Required maps and drawings.*—A "schematic of water flow" and a "location map" are required with this application. All maps and drawings should be either on paper or other material suitable for reproduction. If possible, all sheets should be approximately letter size with margins suitable for filing and binding. As few sheets should be used as necessary to show clearly what is involved. All discharge points should be identified with the discharge serial numbers used in section II of this application. All

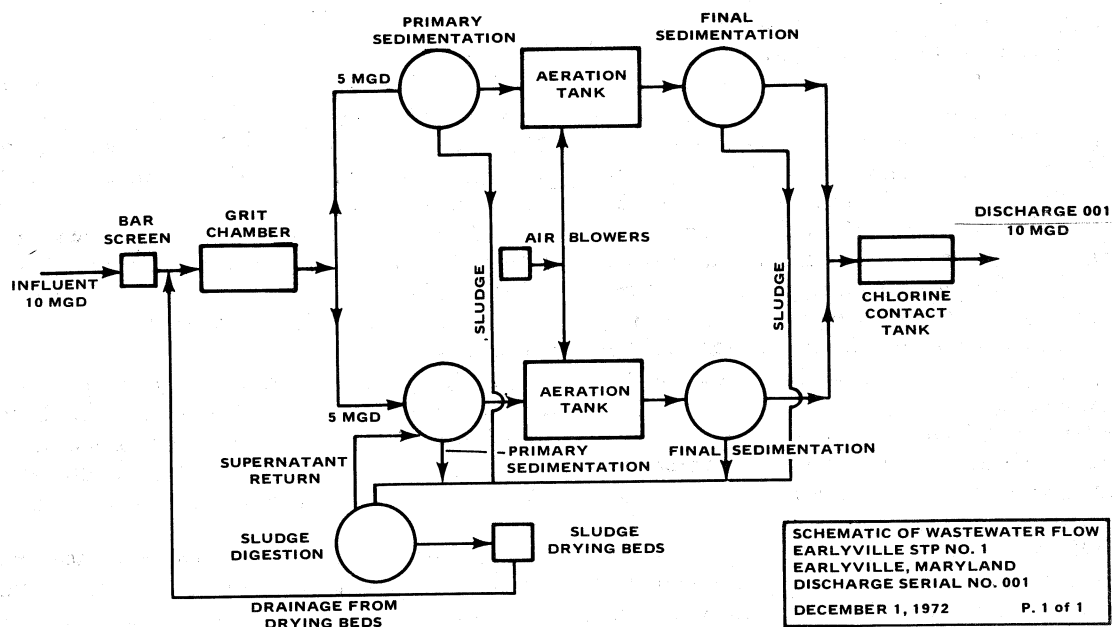


FIGURE A

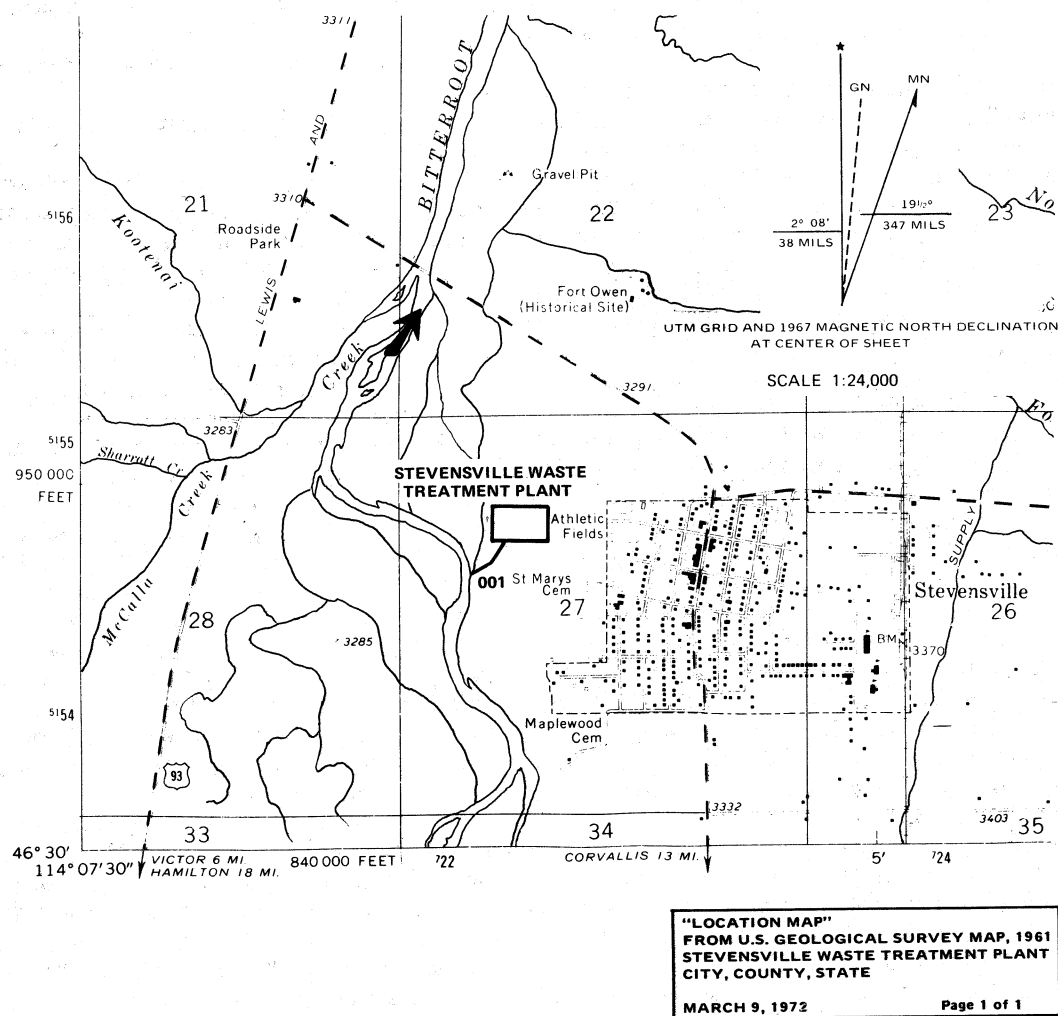


FIGURE B

sheets should include a title which includes applicant's name, facility location, date of drawing and designation of number of sheets of each diagram type as "page--- of ---."

(a) *Schematic of wastewater flow.*— A line drawing of wastewater flow through the facility producing discharges must be attached to this application. Average flow rates should be shown for various wastewaters if possible. Specific treatment processes are to be indicated. The title is to be headed by the statement "Schematic of Wastewater Flow." An example of the drawing required is shown in figure A.

(b) *Location map.*— A map showing the location of each discharge structure, including any and all outfall devices, dispersive devices, and nonstructural points of discharge, must be attached to this application. The usual meridian arrow showing north as well as the map scale must be shown. On all maps of rivers, the direction of the current is to be indicated by an arrow. In tidal waters, the directions of the ebb and flow tides are to be shown. Maps may be traced from a coast survey, lake survey or geological survey chart, road map, or other general map and must bear a note showing the number of title of such map or chart (e.g., "Traced from U.S. Coast Survey Chart 272"). The name of the waterway and the names of the towns and prominent points are to be placed on this map and identified. The location of each existing and proposed discharge structure must be clearly identified using the discharge serial number specified in section II of this application. The title is to be headed by the statement "Location Map." An example of the application map is shown in figure B.

## SEC. II—BASIC DISCHARGE DESCRIPTION: MUNICIPAL

A separate section II must be submitted for each unique discharge, including overflow and bypass points. A unique discharge is defined as having a specific location and a specific activity or process causing the discharge.

1. *Discharge serial number.*— a. Assign a three-digit number beginning with 001 for the point of discharge covered by the first description. Discharge serial numbers must be consecutive for each additional discharge described; hence, the second serial number would be 002, the third 003, etc. Enter this number at the top of each page of section II in the space provided.

b. *Discharge point name.*— Give the name of the discharge point which distinguishes this discharge point from all other discharge points from the facility, e.g., Ursus Creek Discharge; Varga STP Outfall No. 2. Do not use colloquial terms.

c. *Previous discharge serial number.*— If application for a national or Federal permit was made previously for this discharge (see item 4, sec. I), supply the serial number assigned for this discharge.

4. *Discharge point description.*— See instructions for section I, item 7.

5. *Discharge point—latitude/longitude.*— State the precise location where the effluent from the discharge reaches the waterway. If the discharge is an overflow point, give the point where the overflow occurs. If the discharge is to a dry

waterway, give the point where the discharge hits the waterway.

6. *Discharge receiving water name.*— Use the name of the waterway by which it is usually designated on published maps of the area. If possible, refer to one of the map series published by the U.S. Geological Survey. If the discharge is to an unnamed tributary, please so state; and give the name of the first body of water fed by that tributary which is named on the map, e.g., Unnamed ditch to Vaughan Creek, Unnamed arroyo to Serpent River, where Serpent River is the first waterway that is named on the map and is reached by the discharge.

8. *Bypass.*— See definition in instructions for section I, item 8.

9. *Overflow.*— See definition in instructions for section I, item 8.

11. *Discharge treatment.*—

a. *Discharge treatment description.*— Provide in this space a brief narrative description of the waste abatement practices currently in use which affect this discharge. Example: Treatment consists of primary sedimentation using clarifiers, followed by biological treatment using activated sludge, followed by secondary clarification and chlorination. Sludge is treated by digestion and vacuum filtration. Final sludge disposal is by incineration. If no treatment is provided, such as for overflows or bypasses, enter "None."

b. *Discharge treatment codes.*— Describe the wastewater abatement procedures for this discharge using the lettered codes for abatement practices which are listed in table I. As much as possible list the codes in the sequence in which the wastewater abatement procedures are applied at this facility for this discharge.

13. *Plant design data.*— a. *Plant design flow.*— Enter the average flow in millions of gallons per day (mgd), to three decimal places, for which this facility was designed, e.g., 3.120 translates to three million one hundred twenty thousand gallons per day.

b. *Plant design BOD removal (percent).*— Enter as a percentage the 5-day BOD which the plant is designed to remove from the wastewater.

c. *Plant design N removal (percent).*— Enter as a percentage the nitrogen which the plant is designed to remove from the wastewater.

d. *Plant design P removal (percent).*— Enter as a percentage the phosphorus which the plant is designed to remove from the wastewater.

e. *Plant design SS removal (percent).*— Enter as a percentage the suspended solids which the plant is designed to remove from the wastewater.

14. *Description of influent and effluent.*— For each of the parameters listed, enter in the appropriate box the value or code letter answer required. Values must be representative of the discharge during the twelve preceding months of operation or represent best engineering estimates for proposed discharges. For facilities that have not been in operation for one year, data reported should represent the existing period of record with a note to that effect. Detailed instructions for completing particular columns are provided

below. Please report in the units specified. Values do not need to be supplied for boxes that have been crossed out.

Where it is indicated that parameter values are to be provided if available, this information shall be supplied if a sampling and analysis program on these parameters has been initiated or, in the case of new facilities, where an engineering determination has been made.

*Column 1—influent, annual average value.*—Supply the average of all daily values during the year for the influent before treatment.

*Column 2—annual average value.*—Supply the average of all daily values during the year when discharge actually is, or is expected to be operating (if a new discharge). If a discharge occurs irregularly, the value supplied in this column should represent an average for the days the discharge actually occurs.

*Column 3—lowest monthly average value.*—Supply the lowest of the 12 monthly average values for the preceding year. The monthly average value is the arithmetic mean of the daily values in a one month period.

*Column 4—highest monthly average value.*—Supply the highest of the 12 monthly average values for the preceding year. The monthly average value, except for bacteria, is the arithmetic mean of the daily values in a one month period. The monthly average value of bacteria is the geometric mean of the daily values in a one month period.

*Column 5—frequency of analysis.*—Specify the frequency of analysis for each parameter as number of analyses per number of days (e.g., "3/7" is equivalent to three analyses performed every 7 days). If continuous, enter "CONT." When analyses are conducted on more than one individual grab sample which are collected during the same day, the analysis frequency should reflect one analysis whose value is the average of the individual grab sample measurements.

*Column 6—number of analyses.*—Specify the number of analyses performed during the previous 12 months of operation at the average frequency specified in column 5 up to 365.

*Column 7—sample type.*—Specify sample type as follows:

G For grab sample (individual sample collected in less than 15 minutes).

For composite sample "#" is to be replaced by the average number of hours over which the composite sample was collected. Composite samples are combinations of individual samples obtained at intervals over a time period. Either the volume of each individual sample is directly proportional to discharge flow rates or the sampling interval (for constant-volume samples) is inversely proportional to the flow rates over the time period used to produce the composite.

NA If "CONT" was entered in column 6.

*Analytical methods.*—Appendix A contains all parameters with their reporting levels, test descriptions and references. The parameter values can be determined either by use of one of the standard analytical methods as described in table A or by methods previously approved by the EPA Regional Administrator or Director of a federally approved State

program (or their authorized representatives) which has jurisdiction over the State in which the discharge occurs. If the test used is not one shown in table A, the test procedure should be referenced in item 17 or on a separate sheet. If values are determined to be less than the detectable limit (as determined by referenced standard analytical techniques and/or instrument manufacturer's literature), specify "LT (value of detectable limit)" in the appropriate space. For example, if the detectable limit is .005 mg/l and quantities of less than this are determined, specify "LT.005." Do not enter descriptors such as "NIL," "TRACE," "NEG," etc., for this purpose.

In order for values reported to be representative, it is recommended that they be based on daily composite samples (if applicable) taken over at least one week during period of maximum flow, if possible. If samples are taken at periods of less than maximum flow, state in item 17 the percent of maximum flow that was obtained during the sampling period.

*15. Additional wastewater characteristics.*—Indicate by an "X" in the appropriate box those chemical constituents known to be present in the effluent based on any previous analyses that have been performed on this discharge. Those constituents for which no previous analyses have been performed need not be indicated.

### SECTION III—SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION

#### 1. b *Improvements—authority imposing requirement.*

*Locally developed plan.*—A schedule developed at the county or municipal or Federal facility level.

*Areawide plan.*—A schedule developed by a metropolitan authority or other agency formed by local or municipal governments, e.g., Greater Washington area.

*Basin plan.*—A schedule developed by a river basin commission, or other body having authority over a watershed area, e.g., Delaware River Basin, Potomac River Basin.

*State approved implementation schedule.*—A plan imposed to achieve compliance with State water quality standards for intrastate waters or by a permit or equivalent document issued by a State water pollution control agency.

*Federal approved water quality standards implementation plan.*—A schedule imposed to achieve compliance with water quality standards approved by the Environmental Protection Agency or by its predecessors, the Federal Water Quality Administration, and the Federal Water Pollution Control Administration.

*Federal enforcement procedures or actions.*—A schedule imposed by an enforcement conference held under section 10(a) of the Federal Water Pollution Control Act prior to the date of enactment of the FWPCA amendments of 1972.

*State court order.*—A schedule imposed in an order or settlement issued or approved by a State court of law.

*Federal court order.*—A schedule imposed in an order or settlement issued or approved by a court of the United States.

*2. Implementation schedule and actual completion dates.*—Supply the following dates as they are applicable to the implementation schedule (plan) being described:



(a) *Preliminary plan complete.*—The date the preliminary engineering plans are complete.

(b) *Final plan complete.*—The date the final engineering plans are complete.

(c) *Financing complete.*—The date all financing arrangements are to be completed.

(d) *Site acquired.*—The date the land to be used for the treatment works is to be acquired.

(e) *Begin construction.*—The date the construction is scheduled to begin.

(f) *End construction.*—The date the construction is scheduled to be completed.

(g) *Begin discharge.*—The date the discharge is scheduled to start operating after the implemented action has been completed.

(h) *Operational level attained.*—The date the effluent level is scheduled to meet the conditions imposed by the implementation plan.

3. *Actual completion.*—Supply actual completion dates for those steps of the implementation schedule which have been completed.

#### SECTION IV—INDUSTRIAL WASTE CONTRIBUTION TO MUNICIPAL SYSTEM

Each municipal facility is required to complete a separate section IV for each major industrial facility discharging wastes into the municipal system. This includes industrial wastes which are discharged into another collection system that is served by the collection and/or treatment system for which this permit application is being filed. It is the responsibility of the applicant to obtain the required information on any major industrial contributors to his facility, including those contributing via another system. Actual data should be provided if available. If actual data is not immediately available, section IV should be marked "interim" and a best estimate should be provided with a statement indicating the amount of time required to provide the actual information. Filing the permit application should not be delayed beyond the filing deadline for completion of section IV. However, any missing information is to be submitted when available. If certain of the requested information does not apply, it should be marked "NA."

A major contributing industry is considered to be one that has or could have significant impact on the municipal wastewater treatment facility receiving the waste or upon

the quality of effluent from that treatment facility. Specifically, a major contributing industry is defined as one that (1) has a flow of 50,000 gallons or more per average work day; (2) has a flow greater than 5 percent of the total flow carried by the municipal system receiving the waste, or (3) has a toxic material in its discharge. It may be necessary to alter these administrative criteria in certain cases, such as an instance where two or more contributing industries in combination can produce an undesirable effect on either the municipal facility or the quality of its effluent.

1. *Major contributing facility.*—Give the name and the address that designates the location of the facility.

2. *Primary standard industrial classification code.*—Using four digit standard industrial classification (SIC) codes, indicate the type of industrial facility described in this section IV that is discharging into the municipal system covered by this application.

Standard industrial classification (SIC) code numbers and descriptions may be found in the 1972 edition of the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, which is available from the Government Printing Office, Washington, D.C. Do not use previous editions of the manual. Copies are also available for examination at your State water pollution control office, Regional Offices of the Environmental Protection Agency, and at most public libraries.

3. *Principal product or raw material.*—Specify either the principal product or the principal raw material and the maximum quantity per day produced or consumed. Quantities are to be reported in the units of measurement given in table III for the particular SIC categories that are listed. Enter the letter-number code from the "Code" column in table III for the units selected under "Units." Other SIC categories should use the units of measurement normally used by that industry.

6. *Characteristics of wastewater.*—Indicate the characteristics of the wastewater from the contributing industry in terms of parameters that will adequately identify the waste such as BOD, COD, Cr, Zn, pH units, degrees Fahrenheit, etc. The characteristics should be indicative of the waste stream after any pretreatment is provided by the industrial facility but prior to entering the municipal system. In addition to parameter names, give the five-digit parameter numbers specified in appendix A. Report values in units specified in appendix A.

Table I — Waste Treatment Codes—Municipal

The treatment operations shown in this table are, in general, arranged in the order in which they normally occur during a sewage disposal cycle. Select those which apply to the system being reported and enter the codes in Section II, item 11 (b) in the sequence in which they occur. Where parallel or alternate operations are involved, list the codes one after the other, but enclose all of them in slashes. Example: Where plant influent is initially screened and then routed through two primary settling tanks emptying into a single trickling filter and single sludge bed, the treatment processes would be coded as follows: S/C, C/FT, B.

In most instances, each major operation is designated by a single letter. To allow more specific definition of complex operations, one or two letters have been added to the basic codes showing variations in processes or techniques. For example, the basic code for filtering operations is "F;" to show that it is a sand filter, an "S" is added to make the code "FS." It is further defined to show an intermittent sand filter as "FSI." Record the codes which most clearly define your plant operations.

J—Equalization.  
 JS—Surge Tank.  
 S—Screens.  
 SC—Comminutor (grinding of sewage stream).  
 M—Metering.  
 G—Grit chamber.  
 GA—Aerated grit chambers.  
 O—Grease removal and skimming tanks not incidental to settling tanks.  
 OA—Aerated tank (diffused air).  
 E—Pretreatment.  
 EA—By aeration.  
 EG—By chlorine gas.  
 EH—By hypochlorite.  
 EZ—By ozonation.  
 ET—By temperature control.  
 EO—By other.  
 C—Primary settling tanks and holding tanks.  
 R—Intermediate settling tanks (include only if designated for use as part of other than additional treatment processes).  
 AS—Activated sludge treatment.  
 ASN—Conventional (approximately 4 to 8 hours of aeration with approximately 25 percent sludge return).  
 ASA—High rate aeration (less than 4 hours aeration).  
 AST—Tapered aeration (variable aeration along length of tank).  
 ASS—Step aeration.  
 ASP—Plug flow.  
 ASR—Completely mixed step aeration and sludge return.  
 ASG—Stage aeration including intermediate settling.

ASC—Contact stabilization (provides aeration period less than 2 hours in contact tank).  
 ASE—Extended aeration (greater than 24 hours).  
 ASO—Pure oxygen used (80 percent +).  
 AP—Treatment by plain aeration.  
 APC—Contact aeration (fixed media, i.e., contact plates or frames).  
 APP—Plain aeration (no sludge return).  
 APO—Oxidation ditch.  
 F—Filters.  
 FC—Contact beds including dosing siphons.  
 FS—Sand.  
 FSI—Intermittent sand filters.  
 FSR—Rapid sand filters or other sand straining including subsurface.  
 FO—Roughing filters.  
 FT—Trickling filters.  
 FTH—High rate.  
 FTL—Low rate.  
 K—Intermediate treatment (include only if designed for use as part of an other than additional treatment process).  
 KG—Coagulation.  
 KF—Flocculation.  
 N—Final settling tanks.  
 P—Disinfection.  
 PG—By chlorine gas.  
 PH—By hypochlorite.  
 PO—By ozone.  
 I—Application of wastewater treatment facility effluents to land.  
 IC—Cultivated soils used to produce crops for consumption by animals or man.  
 IA—Sprays used.  
 IS—Subsurface application.  
 L—Lagoons or ponds.  
 LE—Evaporation (no discharge).  
 LS—Seepage (no discharge).  
 LP—Settling.  
 LH—Holding or detention.  
 LT—Emergency storage only.  
 LO—Stabilization.  
 LA—Aeration provided.  
 D—Digester, separate sludge.  
 DN—Anaerobic.  
 DA—Mechanical aeration provided (aerobic digestion).  
 DD—Diffused aeration provided (aerobic digestion).  
 B—Sludge drying beds.  
 H—Sludge storage tanks (not second stage digestion units).  
 T—Sludge thickener.  
 TA—Air flotation  
 V—Mechanical sludge dewatering.  
 VC—Centrifuge.

Table I – Waste Treatment Codes—Municipal (Continued)

VV—Rotary vacuum filter.  
 VP—Press.  
 VH—Heat treatment.  
 Z—Sludge conditioning.  
 ZY—Elutriation.  
 W—Additional treatment.  
 WH—Heavy metals removal.  
 WP—Phosphorus removal.  
 WS—Suspended solids removal.  
 WA—Carbon adsorption.  
 WB—Breakpoint chlorination.  
 WC—Chemical coagulation and sedimentation.  
 WD—Distillation.  
 WE—Electrical processes.  
 WEC—Electrochemical.  
 WED—Electrodialysis.  
 WG—Evaporation.  
 WF—Filtration.  
 WK—Foaming.  
 WI—Ion exchange.  
 WJ—Dissolved air floatation.  
 WL—Lagoons—polishing only.  
 WM—Microscreening.  
 WN—Nitrogen removal.  
 WNS—Ammonia stripping.  
 WNA—Biological nitrification 1 stage.  
 WNB—Biological nitrification 2 stage.  
 WND—Denitrification by anaerobic digestion and suspended growth chamber.  
 WNC—Denitrification by anaerobic digestion and packed columns.  
 WX—Chemical oxidation.  
 WU—Neutralization.  
 WR—Reverse osmosis.  
 WV—Solvent extraction.  
 X—Sludge disposal.  
 XB—Barged to sea.

XD—Used for fertilizer.  
 XF—Burned for fuel.  
 XI—Incinerated.  
 XN—Used for landfill.  
 XR—Land reclamation.  
 XO—Wet air oxidation.

Table II – Facility Requirement Codes

	<i>Key word</i>
General action description:	
New facility .....	NEW
Modification (no increase in capacity or treatment) .....	MOD
Increase in capacity .....	INC
Increase in treatment level .....	INT
Both increase in treatment level and capacity .....	ICT
Specific action description:	
Primary .....	PRI
Secondary .....	SEC
Tertiary .....	TER
Polishing lagoon .....	PLA
Phosphorus removal .....	PHO
Nitrogen removal .....	NIT
Organic removal .....	ROR
Disinfection .....	DIS
Sludge processing .....	SLP
Sludge disposal .....	SLD
Outfall .....	OUT
Sanitary intercepting sewer .....	SIN
Sanitary collector sewer .....	CSE
Pumping station .....	IPU
Force main .....	FUM
Infiltration/correction .....	INI
Combined sewer correction .....	CSC

Table III — Units of Measurement by SIC Code (Industry)  
(To be Used for Item 3, Section IV)

SIC Code(s)	Code	Units of measurement	Industry
201; 2077	A-1	Pound live weight killed (meatpacking in slaughterhouse or packinghouse; poultry processing).	Meat products.
	A-2	Pound product (slaughtering & rendering; processing).	
	A-3	Pound raw material (rendering in offsite plant).	
202; 5143	B-1	1,000 lb milk equivalent	Dairy products.
2033; 2034; 2037; 2038.	C-1	Ton raw material	Canned and preserved fruits and vegetables.
204	D-1	1,000 bu processed	Grain mill products.
2061	E-1	Ton sugar cane processed	Raw cane sugar.
2062	E-2	Ton raw sugar processed	Cane sugar refining.
2063	E-3	Ton beets sliced	Beet sugar.
2077		See SIC 201	
2084	F-1	Ton grapes pressed	Wines, brandy, and brandy spirits.
	F-2	1,000 gal wine (table wine, for process season only).	
2085	F-3	1,000 bu grain processed	Distilled liquor, except brandy.
2086	F-4	1,000 standard cases	Bottled and canned soft drinks.
2091; 2092	G-1	Ton raw material	Seafoods.
22	H-1	1,000 lb raw material	Textile mill products.
	H-2	or 1,000 lb product	
2421	I-1	1,000 fbm	Sawmills and planing mills.
2435; 2436	I-2	1,000 ft <sup>2</sup> on three-eighths inch basis	Veneer and plywood.
2491	I-3	1,000 ft <sup>3</sup> treated	Wood preserving.
2492	I-4	1,000 ft <sup>2</sup> on a three-fourths inch basis.	Particle board.
26	J-1	Ton product	Paper and allied products.
2812; 2816; 2819	K-1	Ton product	Inorganic chemicals.
2821; 2823; 2824; 2891; 3079.	L-1	1,000 lb product	Plastic materials and synthetics industry.
2822	M-1	1,000 lb rubber produced	Synthetic rubber (vulcanizable elastomers).
283	N-1	1,000 lb raw material	Drugs and pharmaceuticals.
2841	O-1	1,000 lb product	Soap and detergents.
	O-2	or 1,000 gal product	
2865; 2869	P-1	1,000 lb product	Organic chemicals.
2873; 2874; 2875	Q-1	1,000 ton product	Fertilizer industry.
2879	R-1	1,000 lb product	Agricultural chemicals and pesticides.
2891		See SIC 2821	
2911	S-1	1,000 bbl crude or partially refined feed stock (stream day).	Petroleum refining.
3011; 3021; 3031; 3041; 3069.	T-1	1,000 lb raw material	Rubber products.
3111	U-1	1,000 lb green salted hides or pickled skins.	Leather tanning and finishing.
3211; 3231	V-1	1,000 ton product	Flat glass and glass products made from purchased glass.
	V-2	or 1,000 ft <sup>2</sup> mirrored surface (for mirrored glass only).	
3241	V-3	1,000 bbl product	Hydraulic cement.
327	V-4	1,000 ton product	Concrete, gypsum, and plaster products.

Table III — Units of Measurement by SIC Code (Industry)  
 (To be Used for Item 3, Section IV)  
 (Continued)

SIC Code(s)	Code	Units of measurement	Industry
3292 .....	V-5 .....	1,000 ton asbestos used .....	Asbestos products.
331 .....	W-1 .....	Ton dry coal .....	Coke making.
	W-2 .....	Ton hot metal .....	Blast furnaces.
	W-3 .....	Ton liquid steel .....	Steelworks.
	W-4 .....	Ton hot formed steel .....	Hot forming.
	W-5 .....	Ton processed steel .....	Rolling and finishing mills.
332 .....	W-6 .....	Ton metal cast .....	Iron and steel foundries.
333 .....	X-1 .....	1,000 lb metal product .....	Primary smelting and refining of nonferrous metals.
334 .....	X-2 .....	1,000 lb metal product .....	Secondary smelting and refining of nonferrous metals.
335 .....	X-3 .....	1,000 lb metal processed .....	Rolling, drawing, and extruding of nonferrous metals.
336 .....	X-4 .....	1,000 lb metal cast .....	Nonferrous foundries.
3465, 3711; 3714 ....	Y-1 .....	Unit production .....	Automobile manufacturing.
	Y-2 .....	or square feet	
4911; 4931 .....	Z-1 .....	1,000 MWd generated .....	Electric power services.
4961 .....	Z-2 .....	1 million lb steam produced .....	Steam supply.

## APPENDIX A—STANDARD ANALYTICAL METHODS (INTERIM)

(To be used with item 14, section II)

The following tables are to be used as a guide in reporting the data concerning each parameter. The first column of each table, "PARAMETER & UNITS," indicates the preferred units for reporting data for a given parameter. The second column, "METHOD," lists the preferred analytical method (if any) for determining the required parameter values. The next three columns, "REFERENCES," give the page numbers in standard reference works where a detailed description of the recommended analytical technique given under "METHOD" can be found. These standard references are:

1. Standard Methods for the Examination of Water and Wastewaters, 13th Edition, 1971, American Public Health Association, New York, N.Y. 10019.
2. A.S.T.M. Standards, Part 23, Water; Atmospheric Analysis, 1972 American Society for Testing and Materials, Philadelphia, Pa. 19103.
3. EPA Methods for Chemical Analysis of Water and Wastes, April 1971, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, NERC, Cincinnati, Ohio 45268.

Copies of the publications are available from the above sources, or for review in the Regional Offices of the Environmental Protection Agency or the State Water Control Board.

Data must be reported with an accuracy of *at least* two significant digits, i.e., values less than 1 must be reported *at least* to the nearest .01, values between 1 and 10 to the nearest 0.1, values between 10 and 100 to the nearest 1.0, and so forth.

TABLE A

Chemical Parameters				
Parameter & Units	Method	References		
		Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972	EPA Methods 1971
Alkalinity (as CaCO <sub>3</sub> ) 00410	Titration-Electrometric or Automated Method-Methyl Orange End Point	p. 370	p. 143	p. 6 p. 8
BOD 5 Day mg/liter 00310	Modified Winkler or Probe Method	p. 489	p. 618	p. 15
Chemical Oxygen Demand (COD) mg/liter 00340	Dichromate Reflux	p. 495	p. 219	p. 17
Total Solids mg/liter 00500	Gravimetric, 105°C.	p. 535	—	p. 280
Total Dissolved (Filterable) Solids mg/liter 70300	Glass Fiber Filtration 180°C.	—	—	p. 275
Total Suspended (Non-Filterable) Solids mg/liter 00530	Glass Fiber Filtration 103-105°C.	p. 537	—	p. 278
Total Volatile Solids mg/liter 00505	Gravimetric Method 550°C.	p. 536	—	p. 282
Settleable Matter (Residue) ml/liter 00545	Imhoff Cone, by Volume	p. 539	—	—
Ammonia (as N) mg/liter 00610	Distillation-Nesslerization or Automated Phenolate	—	—	p. 134 p. 141
Kjeldahl Nitrogen (as N) mg/liter 00625	Digestion-Distillation or Automated-Digestion and Phenolate	p. 469	—	p. 149 p. 157
Nitrate (as N) mg/liter 00620	Brucine Sulfate or Automated-Hydrazine or Cadmium Reduction	p. 461	p. 124	p. 185 p. 170 p. 175
Total Phosphorus (as P) mg/liter 00665	Persulfate Digestion and Single Reagent or Manual Digestion and Automated Single Reagent or Stannous Chloride	p. 526	—	p. 246 p. 235 p. 259
Acidity (as CaCO <sub>3</sub> ) mg/liter 00435	Volumetric-color or Electrometric End Point	p. 370	p. 143	p. 5
Total Organic Carbon (TOC) mg/liter 00680	Combustion-Infrared Method	p. 257	p. 702	p. 221
Hardness-Total (as CaCO <sub>3</sub> ) mg/liter 00900	EDTA Titration-Automated Colorimetric, or Atomic Absorption Spectrophotometer	p. 179	p. 169	p. 76 p. 78
Nitrite (as N) mg/liter 00615	Diazotization-Manual or Automated Colorimetric	p. 468	p. 228	p. 195

TABLE A (Continued)

Total Metal Content				
Parameter & Units	Method	References		
		Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972	EPA Methods 1971
Aluminum-Total** mg/liter 01105	Atomic Absorption Spectrophotometer	p. 57	—	p. 98
Antimony-Total** mg/liter 01097	Atomic Absorption Spectrophotometer	—	—	p. 83
Arsenic-Total** mg/liter 01002	Silver Diethyldithiocarbamate or Atomic Absorption Spectrophotometer	p. 62	—	p. 13 p. 99
Barium-Total** mg/liter 01007	Atomic Absorption Spectrophotometer	p. 66	—	p. 83
Beryllium-Total** mg/liter 01012	Aluminon or Atomic Absorption Spectro- photometer	p. 67	—	p. 83
Boron-Total** mg/liter 01022	Curcumin, Carmine or Potentiometric	p. 69	—	p. 83
Cadmium-Total** mg/liter 01027	Atomic Absorption Spectrophotometer or Colorimetric	p. 422	p. 692	p. 101
Calcium-Total** mg/liter 00916	EDTA Titration or Atomic Absorption Spectrophotometer or Colorimetric	p. 84	p. 692	p. 102
Chromium-Total** mg/liter 01034	Atomic Absorption Spectrophotometer or Colorimetric	p. 426	p. 692	p. 104
Cobalt-Total** mg/liter 01037	Atomic Absorption Spectrophotometer	—	p. 692	p. 83
Copper-Total** mg/liter 01042	Atomic Absorption Spectrophotometer or Colorimetric	p. 430	p. 692	p. 106
Iron-Total** mg/liter 01045	Atomic Absorption Spectrophotometer or Colorimetric	p. 433	p. 692	p. 108
Lead-Total** mg/liter 01051	Atomic Absorption Spectrophotometer or Colorimetric	p. 436	p. 692	p. 110
Magnesium-Total** mg/liter 00927	Atomic Absorption Spectrophotometer or Colorimetric	p. 416	p. 692	p. 112
Manganese-Total** mg/liter 01055	Atomic Absorption Spectrophotometer	—	p. 692	p. 114

\*\*See Note 2 at end of table.



TABLE A (Continued)

Total Metal Content				
Parameter & Units	Method	References		
		Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972	EPA Methods 1971
Mercury-Total** mg/liter 71900	Flameless Atomic Absorption Procedure. For updated method, see JAWWA, 64, No. 1, pp. 20-25 (Jan. 1972)	—	—	p. 121
Molybdenum-Total** mg/liter 01062	Atomic Absorption Spectrophotometer	—	—	p. 83
Nickel-Total** mg/liter 01067	Absorption or Atomic Spectrophotometer	p. 443	p. 692	p. 83
Potassium-Total** mg/liter 00937	Colorimetric, Flame Photometric or Atomic Absorption Spectrophotometer	p. 285 p. 283	p. 326	p. 115
Selenium-Total** mg/liter 01147	Colorimetric-Diaminobenzidine	p. 296	—	p. 271
Silver-Total** mg/liter 01077	Atomic Absorption Spectrophotometer	p. 309	—	p. 117
Sodium-Total** mg/liter 00929	Flame Photometric or Atomic Absorption Spectrophotometer	p. 317	p. 326	p. 118
Thallium-Total** mg/liter 01059	Atomic Absorption Spectrophotometer	—	—	p. 83
Tin-Total** mg/liter 01102	Atomic Absorption Spectrophotometer	—	—	p. 83
Titanium-Total** mg/liter 01152	Atomic Absorption Spectrophotometer	—	—	p. 83
Zinc-Total** mg/liter 01092	Colorimetric, or Atomic Absorption Spectrophotometer	p. 444 p. 211	p. 692	p. 120

\*\*See Note 2 at end of table.

TABLE A (Continued)

Chemical Parameters				
Parameter & Units	Method	References		
		Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972	EPA Methods 1971
Organic Nitrogen (as N) mg/liter 00605	Kjeldahl Nitrogen Minus Ammonia (N)	p. 468	—	p. 149
Ortho-Phosphate (as P) mg/liter 70507	Direct Single Reagent, Automated Colorimetric- Single Reagent or Stannous Chloride	p. 532	p. 42	p. 235 p. 246 p. 259
Sulfate (as SO <sub>4</sub> ) mg/liter 00945	Turbidimetric or Automated Colorimetric- Barium Chloranilate	p. 334	p. 52	p. 286 p. 288
Sulfide (as S) mg/liter 00745	Titrimetric-Iodide, Methylene Blue Color Matching or Methylene Blue Colorimetric	p. 551	—	p. 294
Sulfite (as SO <sub>3</sub> ) mg/liter 00740	Iodide-Iodate Titration	p. 337	p. 261	—
Bromide mg/liter 71870	Colorimetric	p. 75	p. 214	—
Chloride mg/liter 00940	Mercuric Nitrate or Automated Colorimetric- Ferric Thiocyanate	p. 97	p. 21	p. 29 p. 31
Cyanide mg/liter 00720	Distillation-Silver Nitrate Titration or Pyridine Pyrazolone Colorimetric	p. 404	p. 556	p. 41
Fluoride mg/liter 00951	Distillation-Spads Automated Complexone or Electrode	p. 171	p. 191	p. 64 p. 66 p. 72
Chlorine-Total Residual mg/liter 50060	Amperometric or Colorimetric	p. 107	—	—
Oil and Grease mg/liter 00550	Liquid-Liquid Extraction	p. 254	—	—
Phenols mg/liter 32730	Colorimetric, 4-AAP	p. 502	p. 445	p. 232
Surfactants mg/liter 38260	Methylene Blue Procedure	p. 559	p. 619	p. 131
Algicides* mg/liter 74051	Specify Method Used in "Remarks"	—	—	—
Chlorinated Organic Compounds* (Except Pesticides) 74052	Specify Method Used in "Remarks"	—	—	—
Pesticides* mg/liter 74053	Specify Method Used in "Remarks"	—	—	—

\*See Note 1 at end of table.

TABLE A (Continued)

Physical and Biological Parameters				
Parameter & Units	Method	References		
		Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972	EPA Methods 1971
Color Pt-Co units 00080	Platinum-Cobalt Visual	p. 160	—	p. 38
Specific Conductance micromhos/cm at 25°C 00095	Wheatstone Bridge	p. 323	p. 163	p. 284
Turbidity Jackson units 00070	Turbidimeter	p. 577	p. 467	p. 308
Fecal Streptococci Bacteria number/100 ml 74054	Specify Method Used in "Remarks"	p. 688	—	—
Coliform Bacteria, Fecal number/100 ml 74055	Specify Method Used in "Remarks"	p. 669 p. 684	—	—
Coliform Bacteria, Total number/100 ml 74056	Specify Method Used in "Remarks"	p. 664 p. 679	—	—

TABLE A (Continued)

Radioactive Parameters		
Type of Radiation	References	
	Standard Methods 13th Ed. 1971	A.S.T.M. Standards Pt. 23 1972
Alpha-Total picocurie/liter 01501	p. 598	p. 509
Alpha Counting Error picocurie/liter 01502	p. 598	p. 512
Beta-Total picocurie/liter 03501	p. 598	p. 473
Beta Counting Error picocurie/liter 03502	p. 598	p. 478

**Note 1.**—\*Interim procedures for algicides, chlorinated organic compounds, and pesticides can be obtained from the Analytical Quality Control Laboratory, National Environmental Research Center, Cincinnati, Ohio 45268, or from the Regional Offices of the Environmental Protection Agency.

**Note 2.**—\*\*For the determination of total metals the sample is not filtered before processing. Choose a volume of sample appropriate for the expected level of metals. If much suspended material is present, as little as 50–100 ml of well-mixed sample will most probably be sufficient. (The sample volume required may also vary proportionally with the number of metals to be determined.)

Transfer a representative aliquot of the well-mixed sample to a Griffin beaker and add 3 ml of concentrated distilled  $\text{HNO}_3$ . Place the beaker on a hotplate and evaporate to dryness making certain that the sample does not boil. Cool the beaker and add another

3 ml portion of distilled concentrated  $\text{HNO}_3$ . Cover the beaker with a watch glass and return to the hotplate. Increase the temperature of the hotplate so that a gentle reflux action occurs. Continue heating, adding additional acid as necessary until the digestion is complete, generally indicated by a light-colored residue. Add sufficient distilled 1:1 HCl and again warm the beaker to dissolve the residue. Wash down the beaker walls and watch glass with distilled water and filter the sample to remove silicates and other insoluble material that could clog the atomizer. Adjust the volume to some predetermined value based on the expected metal concentrations. The sample is now ready for analysis. Concentrations so determined shall be reported as "total." STORET parameter numbers for reporting this type of data have been assigned and are given for each metal.